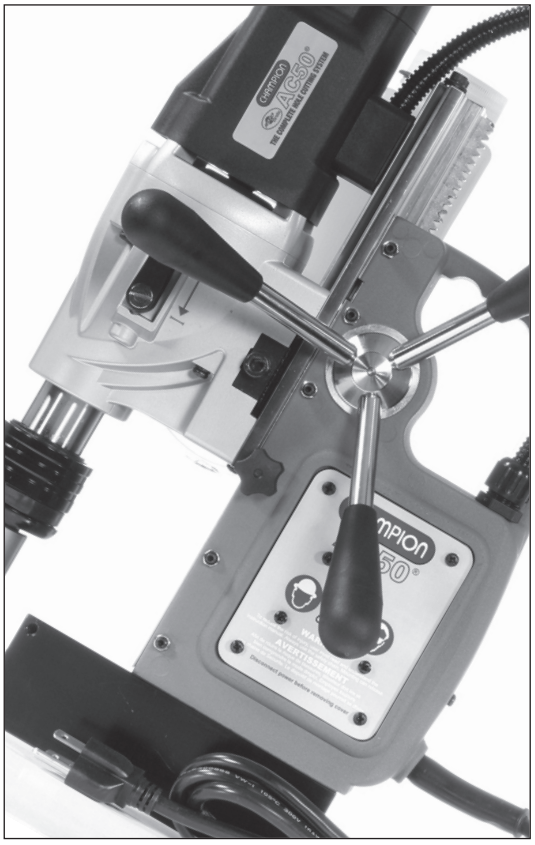
AC50

MAGNETIC DRILL PRESS USER GUIDE



SAFETY / USAGE GUIDELINES



PARTS & SCHEMATICS

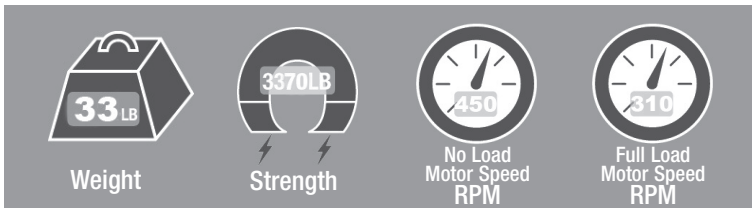


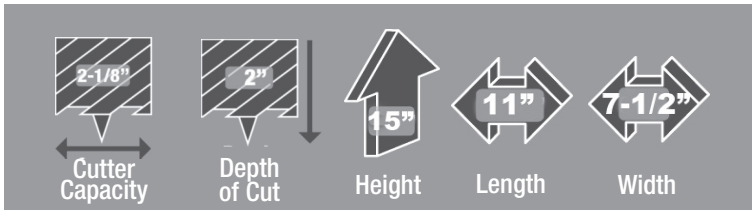
CHAMPION
CUTTING TOOL CORP

IMPORTANT

Please read these operating and safety instructions carefully and completely. For your own safety, before using this equipment check that the voltage is correct and that all handles and parts are firmly secured. If you are uncertain about any aspect of using this equipment, contact your distributor.

PLEASE KEEP THESE INSTRUCTIONS





INCLUDED WITH EVERY AC50

1 Coolant Tank Kit, 1 Chip Guard Kit, 1 Hex key 4mm, 1 Hex key 2.5mm, 1 Wrench 8mm, 3 Handles, 1 Safety Chain & 1 Plastic Carrying Case

Ear and eye protection MUST be worn during operation of this equipment. Do NOT touch the cutter while it is in motion. Always follow the Personal Protection Equipment (PPE) recommendations while operating this tool.

This machine is designed specifically for drilling holes in steel using annular cutters or with twist drills when using the optional drill chuck. We recommend Champion® Rotobrute annular cutters. Please consult your Champion authorized distributor for a complete range of sizes.
Do not modify or use your RotoBrute magnetic drill press for any application other than drilling, reaming, or cutting holes.
Always use safety strap or chain when operating your AC50 magnetic drill.

SAFETY

Be sure to read and follow these important safety instructions:

When using your AC50 drill press, be sure to follow these important safety precautions:
1. Before operating the machine, check supply voltage and general conditions, i.e. cable/cord damage. A machine with a damaged cable must be repaired prior to use.
2. Always use safety strap or chain in all drilling applications.
4. Since cutting tools can shatter, eye and head protection should be worn at all times.
5. After use, clean machine and cutters and keep in the case provided.
6. Store when not in use, in a dry environment.
7. Always provide a method of catching slug, where the ejected slug may cause injury (slug ejects at end of cut).
8. Should the cutter jam in the work-piece, stop the machine immediately. Isolate the machine at the main supply. Loosen the cutter by rotating the arbor. Do not attempt to free cutter by starting and stopping the motor.
9. Always use the safety guard provided.

Electrical Safety

1. Grounded tools must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way.
2. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded. If the tools should electrically malfunction or breakdown, grounding provides a low resistance path to carry electricity away from the user.
3. Never use the cord to carry the tools or pull the plug from an outlet. Replace damaged cords immediately.
4. When operating a power tool outside, use an outdoor extension cord marked “W-A” or “W”. These cords are rated for outdoor use and reduce the risk of electric shock. Minimal gauge external cord should be 12/3.
5. Use the AC50 with 110 A/C voltage only. Not for use with generators, welders or any DC power source. Do not use on any surface where welding is taking place.

Personal Safety

Stay alert, watch what you are doing and use common sense when operating a power tool.
Do not use tool while tired or under the influence of drugs, alcohol, or medication.
Do not wear loose clothing or jewelry. Avoid accidental starting. Be sure switch is off before plugging in. Carrying tools with your finger on the switch or plugging in tools that have the switch on invites accidents.
Remove adjusting keys before turning the tool on.
Do not overreach. Keep proper footing and balance at all times.
Safety equipment (eye protection, dust mask, nonskid safety shoes, hard hat, hearing protection) should be used for appropriate conditions.

Tool Use and Care

Use clamps or other practical ways to secure and support the work-piece to a stable platform.
Do not force tool. Use the correct tool for the application.
Disconnect the plug from the power source before making any adjustments, changing accessories, or storing the tool.
Store idle tools out of reach of children and other untrained persons.
Maintain tools with care. Keep cutting tools sharp and clean.
Check for misalignment or binding of moving parts, breakage of parts and any other condition that may affect the tool’s operation. If damaged, have the tool serviced before using.

Service

Tool service must be performed only by qualified personnel.
When servicing a tool, use only original replacement parts.
Use of unauthorized parts will void the warranty.
Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.

Magnetic Drill Safety

The drill’s magnetic adhesion depends on the thickness of the work-piece. 1/2” (13mm) is the minimum thickness for safe operation. Keep the magnet clean of metal chips and other dirt and debris. These will seriously reduce the magnetic adhesion. The drill must be operated on its own electrical outlet. Always use the supplied safety strap or chain. An electrical overload can result in loss of adhesion.

CAUTION: The slug ejects at end of cut and is very hot.

WARNING: Do not attempt to drill a work-piece, which is thicker than the maximum cutting depth of the cutter being used. Never exceed 2-1/8” cutter diameter.

Maintenance and Troubleshooting

Keep the drill press and the cord clean. In case of electrical or mechanical malfunction, immediately switch off the tool and disconnect the plug. Excessive sparking generally indicates the presence of dirt in the motor or worn out carbon brushes. Periodically check brushes for wear and replace when they reach 1/4” (6mm). Also check that the machine is well lubricated.
For all other service and maintenance, please contact a Champion authorized service center.

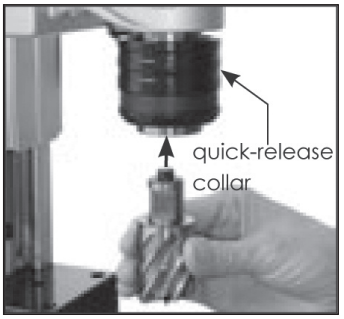
IMPORTANT

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PLEASE KEEP THESE INSTRUCTIONS

Using Annular Cutters

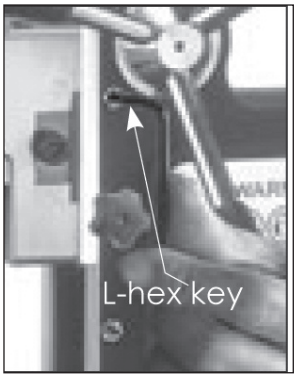
No tools are needed to mount annular cutters to the AC50.
Mounting annular cutters using the quick-change arbor:



1. All AC50 machines come equipped with a quick-change arbor. The quick-change arbor allows users to install cutters and twist drills in seconds.
2. First, insert the pilot pin into the cutter.
3. Push up on the quick change collar.
4 Insert the annular cutter with pilot pin and turn until the flat meets the locking pin
5. When the flat meets the locking pin, the collar will snap down
6. Double check that the collar is down and the cutter is fully locked before operating the mag drill

Caution: Never use a cutting tool that is larger than the maximum rated capacity of the machine.

Adjusting the Gibs (Dovetail Slides)



1. Periodically check, lubricate, and adjust as needed.
2. The gibs require adjustment if too loose.
3. To adjust, loosen the lock nuts and adjust the adjustor screws evenly while moving the handle up and down.
4. Adjust so that there is no free play, without any binding anywhere in its range of travel.
5. Then retighten the lock nuts.

Repositioning of Handles

1. Elevate the slide upward to full height.
2. Remove the pinion cap screw and pinion cap from the shaft end (opposite side to handles).
3. Slide the pinion with the handles on outward, approximately 1/3rd distance.
4. Disengage the rack by means of raising the slide up by another 3/4".
5. Remove pinion, reposition through opposite side of body casting and reverse procedure as above.

Assembly of Traverse Handles

1. To assemble traverse handle, place each of the three (3) handles into the threaded holes on the pinion shaft, turning clockwise to tighten.
2. To remove handles, turn counter-clockwise.

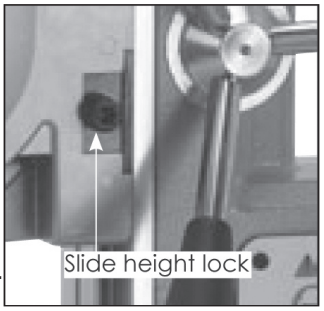
Assembly of Safety Guard

1. Mount safety guard to magnet using two wing nuts provided.

Coolant Tank Assembly

1. First attach clear tube to the bottom of the coolant tank. Loosen the nut and slide nut onto tube. Tighten the nut.
2. Slide tank hanger over the screw on the upper right hand side of slide and tighten.
3. Firmly insert the opposite end of tube into quick-release connector.
4. To remove, first firmly push the red collar of the connector and pull the tube out.
5. Cutting coolant fluid is always required when using annular cutters. Open tank cover and fill. Check coolant fluid level often. Keep coolant tap closed when not in use.

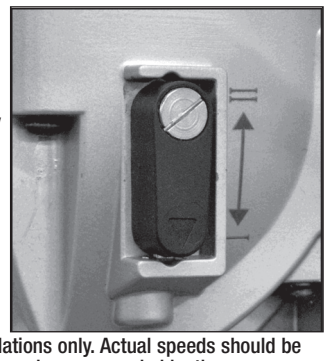
Adjusting the Slide Height



1. Adjustable slide height models allow the operator to quickly change the height position of the motor head on the slide.
2. This is useful when switching between twist drills and annular cutters.
3. For annular cutters, use the lowest position possible for best stability. For twist drills, raise the motor head to allow enough clearance for the twist drill to be mounted.

To adjust:
1. Using the T-handle hex wrench, loosen the socket cap screw on the Slide Height Lock.
2. Slide the motor head to the desired position.
3. Tighten the Slide Height Lock.

Gear Selection



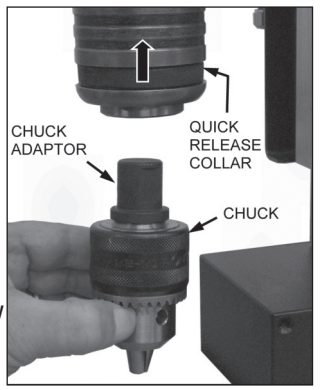
1. Select the desired gear by swinging the gear selector tab out of the detent slot and into the correct speed
2. Then pop the selector tab back into the detent.
3. It may be necessary to turn the spindle by hand slightly to shift into gear.

GEAR	NO LOAD SPEED	FULL LOAD SPEED
1	310 rpm	180 rpm
2	450 rpm	270 rpm

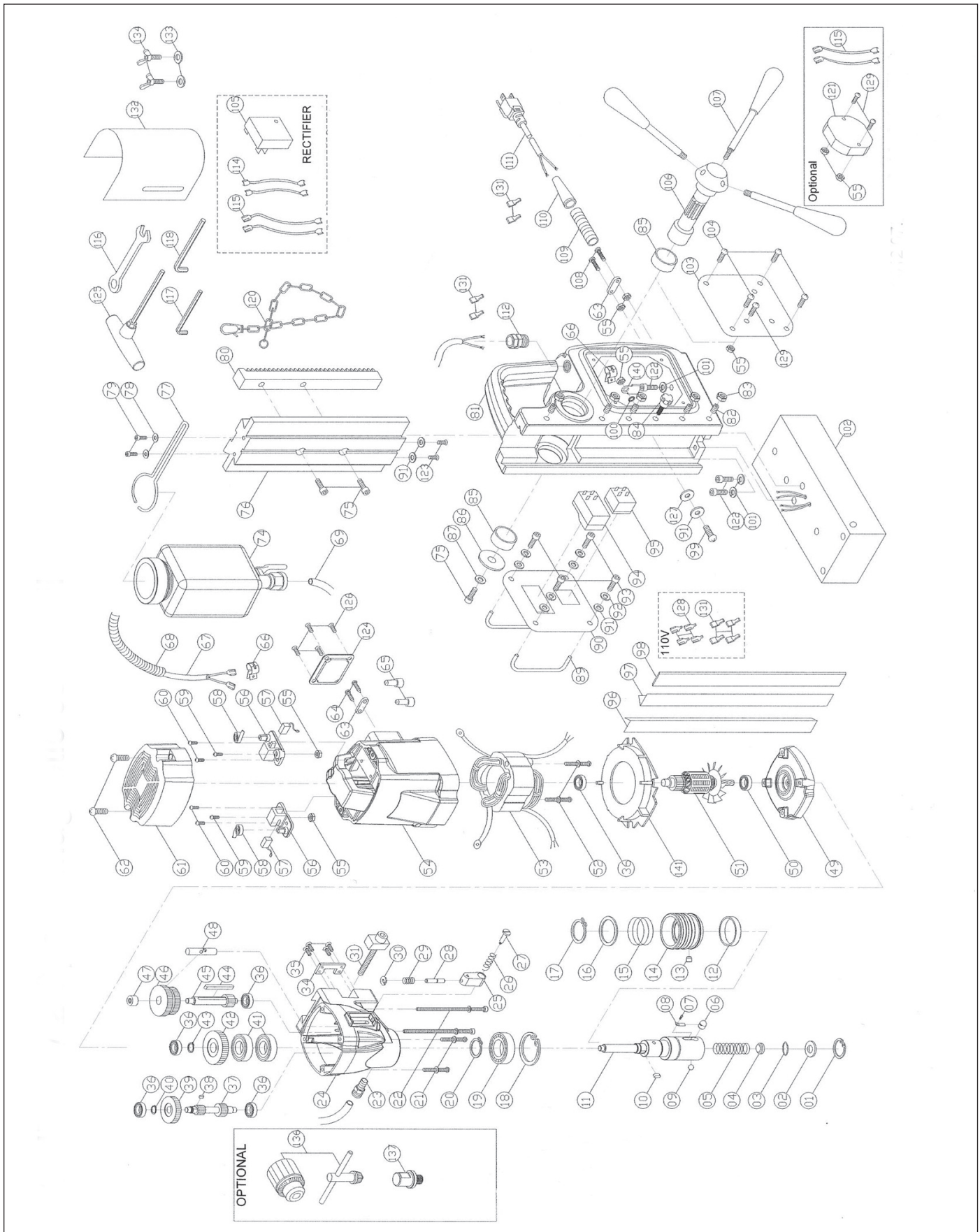
NOTE: These speeds are general recommendations only. Actual speeds should be determined by the material and the cutting speed recommended by the cutting tool manufacturer.

CAUTION: Ensure that that gears engage fully.
CAUTION: ALWAYS ensure that the machine is fully stopped before attempting to change gears!
CAUTION: Never change gears on a running machine!

Assembly of Drill Chuck for use with Straight Shank Tools



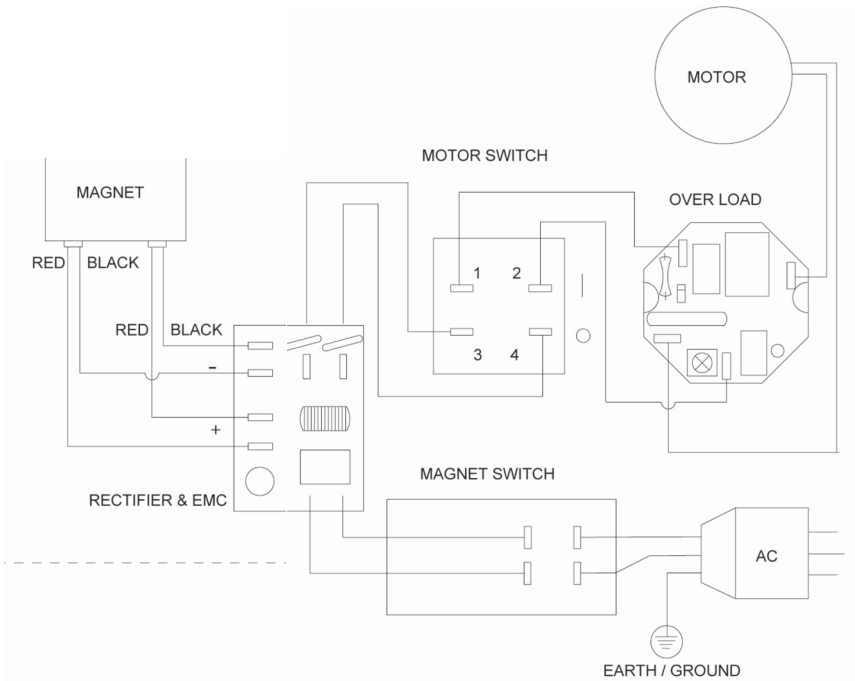
1. An important feature of the AC50 is that it can quickly and easily be converted to operate standard twist drills and other straight shank cutting tools such as chassis reamers.
2. Optional equipment RB1234 chuck adapter and AC35-1220 are needed to use the AC50 with twist drills.
3. Insert the RB1234 in the quick change arbor and make sure that the flats align with the locking mechanism of the arbor.
4. Screw the AC35-1220 on to the adaptor.
5. You are now ready to insert your cutting tool into the chuck.
6. Tighten down with the appropriate chuck key and you are ready to drill.


RECTIFIER
Optional
110V
OPTIONAL

No.		List/Size Description (Qty per Machine)
1	AC5001	INTERNAL CIRCLIP R-19 (1)
2	AC5002	ARBOR WASHER 10 x 18.5 x 0.8 (1)
3	AC5003	O-RING 12 x 20 x 4 (1)
4	AC5004	COOLANT SEAL 12 x 10.2 x 15 (1)
5	AC5005	SPRING 1.2 x 10.1 x 12.5 x 12T x 90L (1)
6	AC5006	LOCKING PIN 12.3mm (1)
7	AC5007	SET SCREW M3 x 4 (1)
8	AC5008	LOCKING PIN SPRING (1)
9	AC5009	CHECK BALL (1)
10	AC5010	PARALLEL KEY 5 x 5 x 10 (1)
11	AC5011	SPINDLE (1)
12	AC5012	RING FOR LOCK PIN (1)
13	AC5013	COLLAR PIN (1)
14	AC5014	QUICK-RELEASE COLLAR (1)
15	AC5015	SPRING 2 x 39 x 43 x 3T x 30L (1)
16	AC5016	SPRING SEAT RING 35.1 x 44.5 x 2 (1)
17	AC5017	EXTERNAL CIRCLIP S-35 (1)
18	AC5018	INTERNAL CIRCLIP R-47 (1)
19	AC5019	BEARING 6005ZZ (1)
20	AC5020	EXTERNAL CIRCLIP S-25 (1)
21	AC5021	SCREW M5 x 65 (2)
22	AC5022	SCREW M5 x 110 (2)
23	AC5023	COOLANT CONNECTOR (1)
24	AC5024	GEAR CASE (1)
25	AC5025	SELECTOR TAB (1)
26	AC5026	SPRING 1 x 9 x 11 x 4T x 10.5L (1)
27	AC5027	SHOULDER SCREW (1)
28	AC5028	DETENT PIN (2)
29	AC5029	SPRING 5.3 x 6.5 x 5T x 17L (1)
30	AC5030	E-CLIP E-3 (1)
31	AC5031	HEIGHT LOCK (1)
34	AC5034	LOCK BRACKET (1)
35	AC5035	SCREW M4 x 10 (4)
36	AC5036	BEARING 608ZZ (5)
37	AC5037	MAIN SHAFT PINION M1.0 x 11T & 15T (1)
38	AC5038	PARALLEL KEY 4 X 4 X 8 (1)
39	AC5039	INPUT GEAR M1.0 X 36T (1)
40	AC5040	EXTERNAL CIRCLIP S-10 (1)
41	AC5041	OIL SEAL 25 x 40 x 7 (2)
42	AC5042	OUTPUT GEAR M1.25 x 39T (1)
43	AC5043	EXTERNAL CIRCLIP S-15 (1)
44	AC5044	PARALLEL KEY M5 x 5 x 50 (1)
45	AC5045	INTERMEDIATE GEAR PINION M1.25 x 10T (1)
46	AC5046	INTERMEDIATE GEAR M1.0 x 46T & 42T (1)
48	AC5047	NEEDLE BEARING HK 0810 (1)
48	AC5048	SELECTOR FORK (1)
49	AC5049	GEAR PLATE (1)
50	AC5050	BEARING 6001-LLU (1)
51	AC5051	ARMATURE 7T (1)
52	AC5052	SCREW M5 x 60 (2)
53	AC5053	STATOR (110V) (1)
54	AC5054	MOTOR HOUSING (1)
55	AC5055	NUT M4 X 8 (8)
56	AC5056	BRUSH HOLDER (2)
57	AC5057	CARBON BRUSH 7 x 11 x 17 (PAIR) (2)
58	AC5058	BRUSH SPRING (2)
59	AC5059	SCREW M4 x 10 (2)
60	AC5060	SCREW M4 x 10 (4)
61	AC5061	MOTOR TAIL COVER (1)
62	AC5062	SCREW M4 x 25 (2)
63	AC5063	CABLE CLIP (2)
64	AC5064	SCREW M4 x 14 (2)
65	AC5065	WIRE CONNECTOR C4 (3)
66	AC5066	CABLE CLAMP (2)
67	AC5067	MOTOR CABLE 1.0 x 2C x 65cm (1)

No.		List/Size Description (Qty per Machine)
68	AC5068	CABLE PROTECTOR 40CM (1)
69	AC5069	COOLANT TUBE 15CM (1)
74	AC5074	COOLANT TANK ASSEMBLY (1)
75	AC5075	CAP BOLT M6 x 16 (3)
76	AC5076	SLIDE (1)
77	AC5077	COOLANT TANK BRACKET (1)
78	AC5079	FLAT WASHER 5 x 12 x 1 (2)
79	AC5079	SOCKET CAP SCREW M5 x 16 (2)
80	AC5080	GEAR RACK (1)
81	AC5081	STAND BODY (BLUE) (1)
82	AC5082	GIB SET SCREW M5 x 20 (5)
83	AC5083	GIB LOCK NUT M5 (5)
84	AC5084	THUMB SCREW M5 x 16 (1)
85	AC5085	BUSHING 28 x 32 x 12 (2)
86	AC5086	FLAT WASHER 6 x 40 x 2.5 (1)
87	AC5087	FLAT WASHER 6 x 25 x 1 (1)
89	AC5089	SWITCH GUARD BAR (2)
90	AC5090	SWITCH PANEL (1)
91	AC5091	FLAT WASHER 4 x 10 x 1 (7)
92	AC5092	SPRING WASHER M4 (4)
93	AC5093	SPRING WASHER M4 (4)
94	AC5094	MOTOR SWITCH (110V) (1)
95	AC5095	MAGNET SWITCH (1)
96	AC5096	GIB STRIP - LEFT (1)
97	AC5097	GIB STRIP - RIGHT (1)
98	AC5098	GIB TENSIONER 260 x 11 x 2.3 (1)
99	AC5099	SCREW M4 x 16 (1)
100	AC50100	SUN WASHER M5 (1)
101	AC50101	SPRING WASHER M6 (3)
102	AC50102	MAGNET BASE 164 x 80 x 48 (1)
103	AC50103	SIDE PANEL (1)
104	AC50104	SCREW M4 x 8 (4)
105	AC50105	RECTIFIER (1)
106	AC50106	PINION SHAFT (1)
107	AC50107	HANDLE (3)
108	AC50108	SCREW M4 x 30 (2)
109	AC50109	STRAIN RELIEF 7CM (1)
110	AC50110	CORD ARMOR (1)
111	AC50111	POWER CORD 1.0 x 3C x 2.5M (1)
112	AC50112	CABLE GLAND (1)
114	AC50114	LEAD WIRE 18CM YELLOW (2)
115	AC50115	LEAD WIRE 18CM BLACK (4)
116	AC50116	WRENCH M8 (1)
117	AC50117	HEX KEY M2.5 (1)
118	AC50118	HEX KEY M4 (1)
120	AC50120	SAFETY CHAIN (1)
121	AC50121	OVERLOAD UNIT(110V) (2)
122	AC50122	CAP BOLT M6 x 20 (3)
123	AC50123	PAN HEAD SCREW M4 x 6 (2)
124	AC50124	MOTOR COVER PLATE (1)
125	AC50125	BT-HANDLE HEX KEY M6 (1)
126	AC50126	SCREW M4 x 8 (4)
127	AC50127	RUBBER WASHER M4 (1)
128	AC50128	TERMINAL (1)
129	AC50129	SCREW M4 x 25 (3)
130	AC50130	TIE (1)
131	AC50131	TERMINAL ENDS (8)
132	AC50132	CHIP GUARD (1)
133	AC50133	FLAT WASHER 6 x 13 x 1 (2)
134	AC50134	SCREW M6 x 10 (2)
136	AC35-1220	DRILL CHUCK (OPTIONAL)
137	RB1234	DRILL CHUCK ADAPTOR (OPTIONAL)
AC50-CASE-MT		AC50 EMPTY MOLDED CASE
140	AC50140	EARTH MARKING
141	AC50141	FAN SHROUD

AC50 ELECTRICAL DIAGRAM



CHAMPION CUTTING TOOL CORP
P.O.Box 368, Rockville Centre, NY 11571-0368
Tel: 516-536-8200 Fax: 516-536-8186
www.championcuttingtool.com